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A Survey of Iranian Primiparous Women's Perceptions of Vaginal Examination During Labor

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Abstract

Objective: To assess perceptions about vaginal examinations (VEs) during labor among women referred to the Akbarabadi Hospital in Tehran, Iran. **Methods:** This was a cross-sectional study conducted from December 2015 to May 2016. It included 200 primiparous women. Convenience sampling was used to select participants. The data collection tool was a questionnaire that collected both demographic and obstetric data from participants, as well as data in relation to women's experiences according to a designated and validated scale, 24 hours after childbirth. Higher scores were indicative of a more positive perception in relation to a participant's experience of VE. **Results:** The mean ± SD score for the perception of the VE and number of examinations in the active phase of labor was 62.9 ± 26.2 and 7.4 ± 2.44, respectively. Multiple linear regression analysis showed a significant relationship between perceived duration of examination (short, average [B = −1.03], long [B = 3.84]), feeling of comfort with the examiner (B = 2.73), and number of examiners (B = −0.81) with the mean scores of their perceptions ($P < .05$). These 3 variables accounted for 8% of the changes in the women's perceptions score of VE. **Conclusion:** The majority of participants in this study underwent excessive VEs during labor. If obstetrically safe, a reduction in the number of examinations during labor along with decreased duration based on women's perceptions could improve women's perceptions of VE overall. Additionally, should each VE be performed by the same clinician, women's perceptions in relation to VEs may also improve.

Keywords

perception, experience, labor, vaginal examination

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Introduction

Vaginal examinations (VEs) are largely routine in both obstetric and midwifery care.[1,2] The experience of such examinations should be optimized for women, who may find themselves vulnerable at this time.[2] Due to this vulnerability, the World Health Organization has also recommended that only a limited number of VEs be conducted routinely during active labor.[3]

In addition to physical discomfort, a VE can also cause psychological stress or trauma to women.[4] During a VE, some women can also experience negative emotions in relation to embarrassment about undressing, fear of pain, and concern about genital health and vaginal odor.[4,5] Factors influencing women's perceptions of VE during labor may include age, level of education, history of sexual abuse, the mental image of the genital area, gender of the examiner, and number of examiners.[6,7]

Other studies have reported variable perceptions about VE in childbearing populations.[4,8-10] For example, some women reportedly experienced shyness due to being placed in the lithotomy position during VEs.[9,10] Evidence has also shown that some women birthing in the Netherlands have negative experiences in relation to VEs attributed to pain, feelings of embarrassment, lack of comfort, lack of sense of respect, and inability to avoid examination.[8] According to the findings of Phumdung and Youngvanichsate's (2009)

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study, half of the women had a mild fear of VE and half of them reported fear of infection due to VE.[10] Furthermore, in one study approximately 94% of participants reported the usefulness of the VE and believed that a VE would facilitate labor.[4]

The findings presented in studies conducted in Iran in particular indicated that many women did not have adequate knowledge in relation to childbirth and VEs in general prior to giving birth.[11,12] Such lack of knowledge has been shown to increase rates of cesarean section.[13,14] Moreover, one study conducted in Iran reported that only 7% of participants were satisfied with their experience of VE during labor, and that this dissatisfaction then went on to affect participant satisfaction in relation to physiological birth.[15]

In addition to the differences found in perceptions about VE, some women undergo numerous other interventions and procedures undertaken by various medical professionals. Here, there can be a lack of proper collaboration between the examiner and examinee.[8,14,16,17]

Midwives have an important role in the process of caring for women during labor as they attempt to prevent the occurrence of excessive numbers of VEs being undertaken.[8,15,18] The aim of this study was to explore Iranian women's perceptions of VEs during labor, and address the absence of research on this topic in Iran needed to inform the development of future interventions and enhance practice in this area.

Methods

This was a cross-sectional study that recruited women who had recently experienced giving birth vaginally in a teaching hospital in an urban area of Iran between December 2015 and May 2016. The sample size of the study was determined according to a previously conducted study[5] and the Cochran formula (estimation of percent and ratio):

$$n = \frac{\left(z_{1-\frac{\alpha}{2}} + z_{1-\beta}\right)^2}{\omega^2} + 3$$

$$\omega = \frac{1}{2} ln \frac{1+r}{1-r}$$

$$n = \frac{(1.96 + 0.84)^2}{(0.202)^2} + 3 = 194$$

with a 95% confidence level and 80% power, with the assumption that the correlation between the perception of women about VEs and related factors would be 0.2. For data collection, we recruited 200 women during the immediate postpartum period (24 hours after childbirth). In order to meet the inclusion criteria, participants had to have given birth between the 37th and 42nd week of pregnancy, be aged between 15 and 45 years, primiparous and in good health.

In line with similar studies,[4,5,9,19,20] women who were deemed to have high-risk pregnancies, hepatitis, AIDS, or any illnesses that caused pain in their perinea and vagina areas were excluded from participation.

The data collection instrument questionnaire consisted of 3 parts: demographic data (age, occupation, education level, ethnicity, and economic status), obstetric data (duration of examination based on women's perceptions, planned pregnancy, history of VE, knowledge of VE, awareness of the importance of conducting an examination, gender of the examiner, feeling of comfort with the examiner, first examination stage, number of examinations in latent phase, number of examinations in the active phase of labor, and number of examiners), and a scale developed by Lewin et al[5] to record women's VE experiences. This tool consisted of 20 items on a 5-point Likert-type scale with a minimum score of 20 and a maximum of 100. Higher scores indicate a more positive perception in relation to VE. The Likert-type score for items 1 to 4, 6 to 9, 11, 12, and 18 was rated as follows: 5 (strongly agree) to 1 (strongly disagree). The negative scoring for items 5, 10, 13, 14, 15, 16, 17, and 19 was rated as 5 (strongly disagree) to 1 (strongly agree). The validity and reliability of this instrument has been confirmed elsewhere.[5] The validity of the Farsi version of this instrument used here was assessed and confirmed by Dabagh-Fekri et al[19] with a Cronbach's alpha of .76 and a correlation coefficient of 0.79.[19]

The Ethics Committee affiliated with the Faculty of Nursing Midwifery, Iran University of Medical Sciences, Tehran, Iran (code: IR.IUMS.REC 1395.9411373005) awarded ethical approval for this study, prior to any research taking place. Eligible women recruited via the Akbarabadi Hospital in Tehran who provided their informed consent to participate were invited to complete the study's survey tool of data collection.

Data analysis was performed using SPSS v.21. Here, descriptive statistics, the independent-samples *t* test, and 1-way analysis of variance were used. Demographic and obstetric variables (independent variables) with $P < .05$ were entered into a linear multiple regression model to assess the effect of each independent variable on the women's perceptions of VE during labor (dependent variable). Before data analysis was commenced, regression assumptions that included the normalization of residues, homogeneity of residual changes, coherence of percussive data, and independence of residues were assessed. The significance level was found to be $P < .05$.

Table 1. Relationships Between Perceptions of the Vaginal Examination in Terms of Demographic Variables (n = 200).

Demographics	n (%)	*P*
Age (years)		
≤19	42 (21)	[a]*P* = .31
20-24	60 (30)	
25-29	66 (33)	
30-34	21 (10.5)	
≥35	11 (5.5)	
Occupation		
Housewife	196 (98)	[b]*P* = .48
Employed	4 (2)	
Education level		
Primary school	15 (7.5)	[a]*P* = .4
Secondary school	36 (18)	
High school and diploma	116 (58)	
University	33 (16.5)	
Ethnicity		
Fars	62 (31)	[a]*P* = .24
Tork	110 (55)	
Lor	18 (9)	
Kord	7 (3.5)	
Other	3 (1.5)	
Economic status (month wages: million RIS)		
Undesirable <20	48 (24)	[a]*P* = .73
Fairly favorable: 20-40	140 (70)	
Optimal: 40-100	12 (6)	
Rich: >100	0 (0)	

[a]One-way analysis of variance.
[b]Independent-samples *t* test.

Results

Overall, 200 participants completed the survey tool. Participants' age was reported as 25.39 (mean) ± 5.5 (SD) years. The women who participated spoke predominantly in Turkish (55%), had a moderate economic status (70%), and all were married. Demographic data are presented in Table 1. Obstetric data are presented in Table 2. The women's perception of VE based on a score of 100 was 62.89 (mean) ± 20.26 (SD). Tables 1 and 2 also show relationships between each variable, and the women's perceptions of VEs. Supplementary Table 1 lists the score for each item, including the highest and lowest scores.

The relationship between each variable with women's perceptions of the VEs was investigated, and subsequently those variables that had a significant relationship were included in a multivariate linear regression model by using the backward elimination method. According to multiple linear regression, the duration of examination based on women's perceptions (short, average [B = −1.03], long [B = 3.84]), feelings of comfort with the examiner (B = 2.73), and the number of examiners (B = −0.81) showed statistically significant relationships with the mean score of the women's perceptions ($P < .05$). In terms of the duration of the VE, a short duration was considered baseline, whereas a long duration for the VE was statistically significant ($P = .02$). In other words, the score of the women's perception of VE in those who felt that the VE took a long time was 3.84 times lower than those women who felt the VE was of a short duration. An increase in 1 score in relation to feelings of comfort with the examiner increased the women's perceptions of the VEs by 2.73. Also, a 1 person increase in the number of examiners reduced the perception score of VE by 0.81. These 3 variables explained 8% of changes in the score of women's perceptions of VE (Table 3).

Discussion

This study explored Iranian women's perceptions of VEs during labor. The findings presented here showed a mean score of 62.9 in relation to evaluated perceptions of VE. However, in a similar study conducted with Jordanian participants, Hatamleh et al[20] reported a mean score of 68.43. Additionally, in the study conducted by Hatamleh et al[20]

Table 2. Relationships Between the Perceptions of the Vaginal Examination (VE) in Terms of Obstetric Variables (n = 200).

Obstetric data	n (%)	*P*[a]
Duration of examination based on women's perceptions		
Short	82 (41)	[b]**P = .02**
Normal	96 (48)	
Long	21 (10.5)	
Planned pregnancy		
Yes	182 (91.5)	[c]*P* = .34
No	17 (8.5)	
History of VE		
Yes	87 (43.5)	[c]*P* = .3
No	113 (56.5)	
Knowledge of VE		
Knew	115 (57.5)	[c]*P* = .23
Did not know	85 (42.5)	
Awareness of the importance of conducting an examination		
Knew	134 (67)	[c]*P* = .58
Did not know	66 (33)	
Gender of the examiner		
Male	15 (7.5)	[c]*P* = .39
Female	185 (92.5)	
Feeling of comfort with the examiner		
Yes	132 (66)	[c]**P = .02**
No	68 (34)	
First examination phase of labor		
Active phase	91 (45.5)	[c]*P* = .2
Latent phase	109 (54.5)	
No. of examinations in latent phase, mean ± SD	0.76 ± 0.82	[d]*P* = .11
No. of examinations in active phase of labor, mean ± SD	7.4 ± 2.44	[d]*P* = .66
No. of examiners, mean ± SD	4.3 ± 1.24	[d]**P = .02**

[a]Values in boldface indicate statistical significance ($P < .05$).
[b]One-way analysis of variance.
[c]Independent-samples *t* test.
[d]Bivariate correlations.

Table 3. Multiple Linear Regression Analysis for the Duration of the Examination Based on Women's Perceptions, the Feeling of Comfort With the Examiner, and Number of Examiners and Score of Perceptions of the Vaginal Examination (VE) in the Women (n = 200).[a]

Variable	B	Beta	CI	*P*[b]
Duration of the examination based on women's perceptions				
Short (baseline)		Reference category		
Normal	−1.03	−0.08	−0.12 to 0.2	.3
Long	−3.84	−0.174	−0.025 to −0.34	**.02**
Feeling of comfort with the examiner				
No		Reference category		
Yes	2.73	0.191	0.11 to 0.32	**.006**
No. of examiners	−0.81	−0.15	−0.021 to −0.3	**.031**

[a]Adjusted $R^2 = 0.08$.
[b]Values in boldface indicate statistical significance ($P < .05$).

nearly half of participants had a negative perception of VE. Similarly, the findings presented in the current study show that just over half of the women surveyed had a negative perception of VE. Conversely, Lewin et al,[5] in a study on 104 primiparous women who gave birth in England, reported that 53% of participants were satisfied with the VEs. Similarly, privacy in performing the VE had the highest mean score.[5] This may indicate a disparity in experiences relating to VE in labor around the world.

In the study conducted by Hatamleh et al,[20] more negative perceptions were reported with increased mean scores. The highest mean scores indicated negative perceptions related to embarrassment, anxiety, and discomfort with the VE. None of these items in the present study had low mean scores. The lowest mean score of positive perceptions reported in the study conducted by Hatamleh et al[20] related to items such as dignity, sexual abuse, self-respect, performing VE with great respect, and sensitivity. In the present study, the VEs performed with increased sensitivity had the highest mean score. This may indicate that more compassion, respect, and sensitivity are required when performing VEs.

Similar findings to the ones presented here in relation to perceptions of VEs are also reported in studies conducted in other countries by Dziobek et al[16] and Lai and Levy.[9] Notably, De Klerk et al[8] reported that 35.2% of women had negative experiences from VE, which were attributed to pain, feelings of embarrassment, lack of comfort, lack of sense of respect, and inability to avoid the examination. To improve perceptions of VE, clinicians may usefully address these concerns in practice.

The findings of this study did not show an association between age and the mean score of perceptions of VE. This concurs with findings from earlier studies.[4,5,8] In contrast, the study by Hatamleh et al[20] reported a mean score of women's perceptions having a significant statistical relationship with age. Here, women aged less than 25 years also reported negative perceptions of VE.[20] This finding was consistent with those reported by Yanikkerem et al.[2] Yet in the present study, there was no significant relationship found between the level of education and the mean score of women's perceptions of VE. This is consistent with other findings reported by Hassan et al[4] and De Klerk et al.[8] Conversely, Hatamleh et al[20] reported that women who had less than a high school education had a lower negative perception of VE. Future studies could usefully recruit larger samples to increase understandings in relation to such demographics.

According to the present study, employment status was not associated with the mean perception of VE. Yet studies by Hatamleh et al[20] and Yanikkerem et al[2] both reported that housewives had more negative perceptions of VEs. In the present study, there was no significant relationship found between perceptions and economic level. This finding contradicts those reported by Yanikkerem et al[2] where women with poor economic status had more negative perceptions. Yet we note that only 2% of participants recruited to the present study were employed at the time of data collection.

The present study also showed no significant relationship between the mean score for women's perception of VE according to the gender of the examiner. This finding is not consistent with those reported by Hattamleh et al[20] and Hassan et al.[4] Notably, Yanikkerem et al[2] reported that 45.5% of the women in their study preferred to be examined by female physicians. Yet these contradictory results could be attributed to the fact that only 15 (7.5%) women were examined by a male physician and 185 women were examined by females.

Participants in the present study underwent an average of 7.56 (range 1-15) VEs during labors. This is a higher number than the average of 5 times (range 1-15) reported for Jordanian women during labor.[20] In the current study, there was no correlation found between the mean score for perceptions of the VE and the number of VEs performed. Yet there was a significant relationship between women's perceptions of VE and women who had five or more VEs in the study by Hatamleh et al.[20] Also, De Klerk et al[8] reported that a negative perception of VEs had a significant relationship with the number of examinations. Further investigation is required to establish why such differences may exist for women birthing in Iran.

Interestingly, while no correlation between perception of VE and number of examinations was found in the present study, a statistically significant reverse relationship was present between perception of VE and number of examiners. Similarly, De Klerk et al[8] reported that a larger number of examiners had a significant relationship with a negative perception of VE. As such, future practices and models of care could usefully promote continuity of care.

In this study, the mean score of perception in terms of the duration of the examination was statistically significant. Hatamleh et al[20] also reported that the mean score for perception was significant in terms of the duration of examination. These findings collectively suggest that clinicians could usefully shorten the duration of VE in pursuit of more positive perceptions.

Since the mean score of the women's perceptions of VE had a significant relationship with the duration of the examination based on women's perceptions, feelings of comfort with the examiner and the numbers of examiners, these variables were included in the multiple linear regression model. The results indicated statistically significant results. For the duration of the examination based on women's perceptions, the short length of the examination was the baseline, which was significant ($P = .018$), whereas long and normal durations for VEs were not significant. In general, based on the multiple regression model, these 3 variables

explained 8% of changes in the score for women's perception of VE.

The majority of Iranian women participating in this study underwent excessive VEs during labor. This is contradictory to the recommendation of 1 VE every 4 hours for the routine assessment of an active first stage of labor in low-risk women published by the World Health Organization.[3] Ultimately, by reducing the number and length of VEs, along with having VEs performed by the same provider, women's perceptions in relation to VE may improve.

This study has reported important findings in relation to Iranian women's perceptions of VEs. Nevertheless, these perceptions of VE were assessed in only one teaching hospital. As such, the findings presented here may not represent the perspectives of all women who gave birth in Iran within the same time frame of this study being conducted. Accordingly, future studies could usefully be conducted via multiple centers and involve larger samples. It may also be advantageous for additional studies to compare women's perception of VEs performed in private hospitals with those performed in government hospitals. Moreover, future research in this area may benefit from taking a mixed methods approach in assessing the relationship between a woman's perceptions of VE and decisions in relation to future childbearing.

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Author Contributions

All authors based in Iran contributed to study design and data gathering. All authors contributed to data analysis and drafting of the manuscript. All authors read and approved the final version of the manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethical Approval

The study was approved by the ethics committee of Iran University of Medical Sciences.

Informed Consent

All participants were informed about the study. Informed consent was obtained from all the participants.

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Supplemental Material

Supplemental material for this article is available online.

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